

# Fort Drum Spatial Engineering System

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# Briefing Overview

- Business Plan For Spatial Engineering
- Fielding Object Technology in Spatial Engineering
- Making the Products Available to Everyone

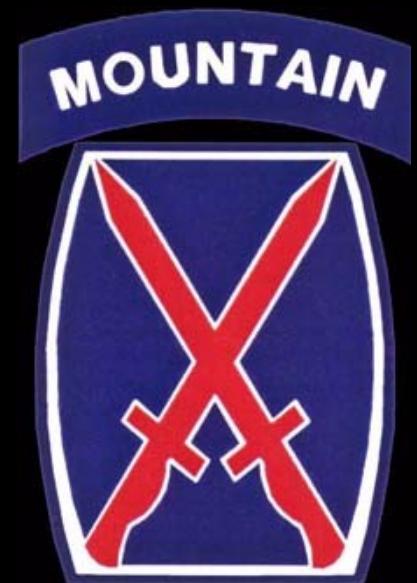


# Home of the 10<sup>th</sup> Mountain Division (L.I.)

- Located 30 miles from Canada
- Home of the 10<sup>th</sup> Mountain Division (L.I.)
- Largest training area in the Northeast
- 10,000 foot runway can land any plane
- Training areas support heavy artillery, armored cavalry, aerial gunnery, and urban warfare

# 10<sup>th</sup> Mount Division (LI)

- Rapid Deployment anywhere in the world ready to fight and win on arrival



# Evolution of a Spatial Data System

- A solid information system follows a logical business model
- The business plan would address the system as a whole and not at the end user level
- A product oriented approach based on standards was adopted

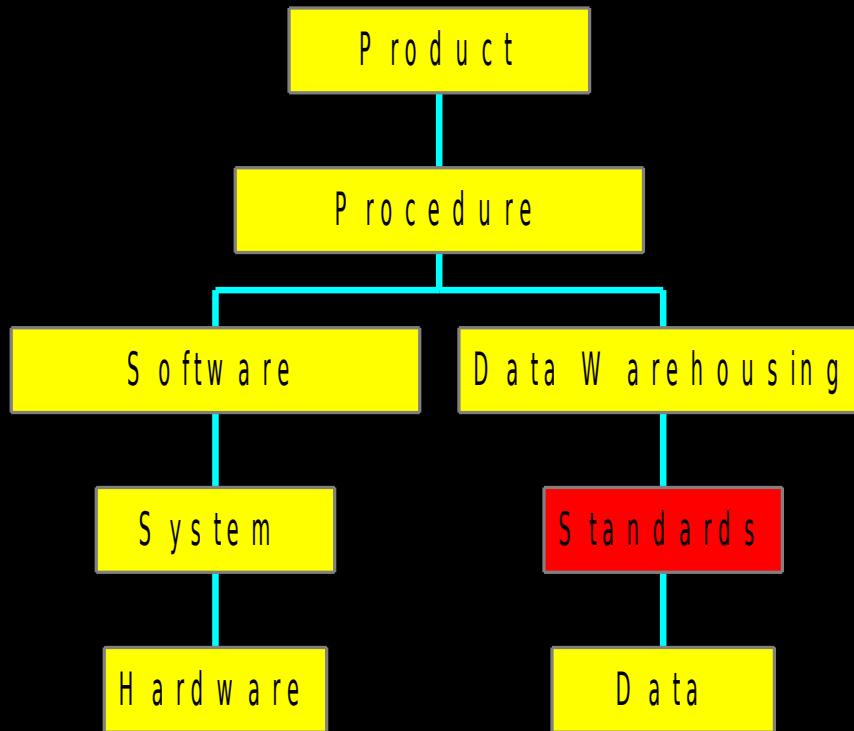
# The Business Plan

- Define the products to be produced
  - Short term
  - Long term
- Give each product a name
- Break each product into components
  - What processes and data are needed to produce the goal
  - What requirements do the processes place on the system
  - Give each component a name

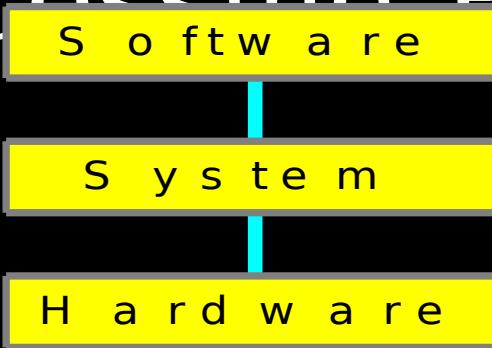
# The Business Plan (cont)

- Given the requirements the products place on the system
  - Define what software is required
  - What procedures need to exists to produce the result
  - What equipment is required

# The Information Processing Plant



# The Information Processing Plant



- System management is vital
  - No system = no product
- Failing computers and networks levy a heavy tax
  - They frustrate users and lower morale
  - Add a tremendous cost in time and lost effort
- Software is the interface between the application and the system
- If any of these fail → No Product

# The Other Half of the Model

- With a plant in place, it is time to define the products and their components
- The components will rely on procedures which use certain software to process data
- The data will be stored using a warehouse model - the TSSDS
- Enumeration of product names gives rise to a data processing model

# Object Oriented Implementation

- Objects are things -- nouns
- An object is composed of an association of properties and methods
- Properties are adjectives which describe the object
- Methods provide a way of communicating with the object and giving it commands

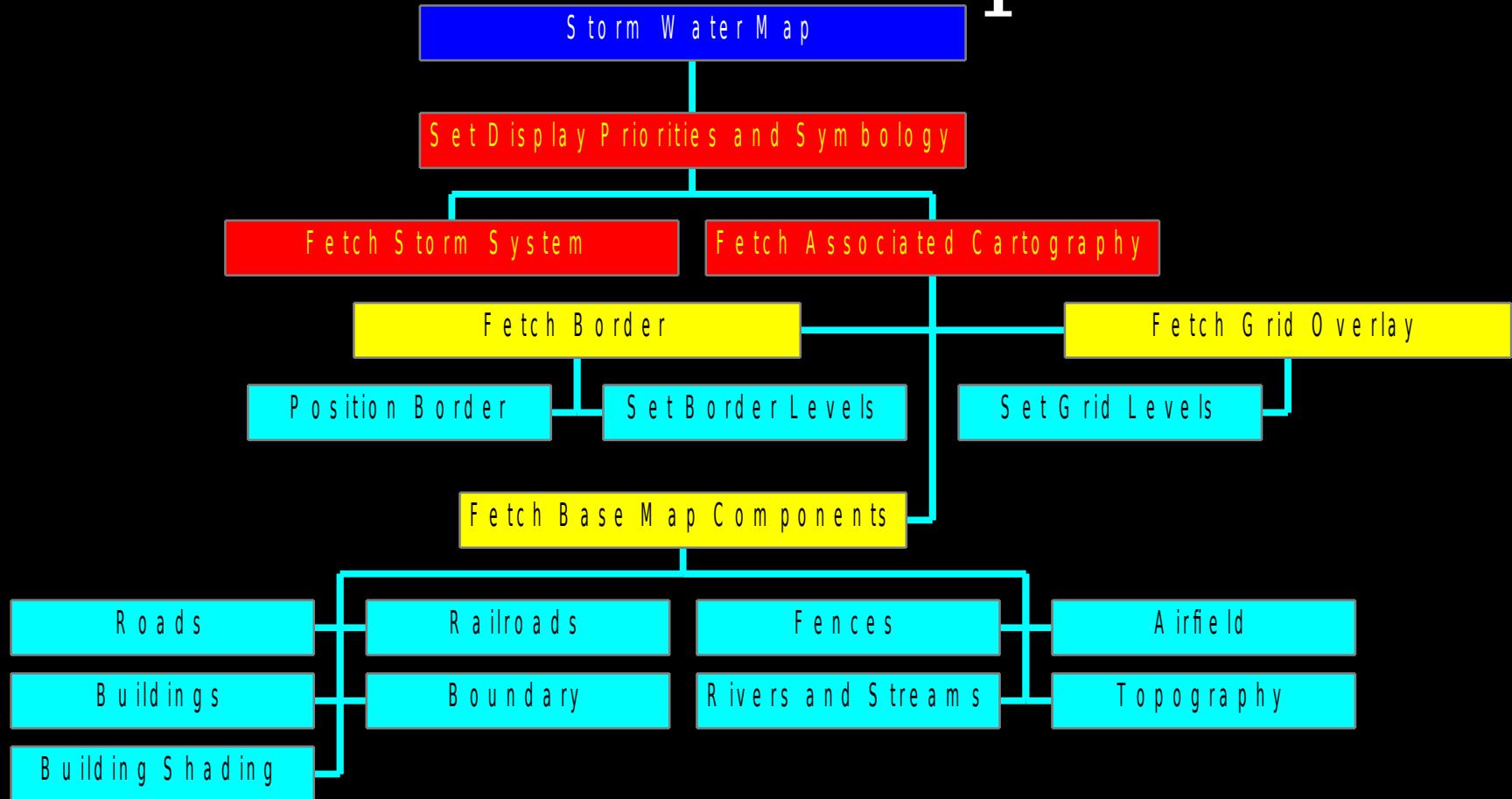
# Objects Deployed

- The TSSDS defines the properties of a multitude of low level objects (features)
- The TSSDS further groups collections of objects into higher level objects (categories)
- Categories have a display reliance on other categories
- Most especially the TSSDS provides a vocabulary and prescription for storage

# Basic Map Components

- Maps are composed of a group of associated objects
  - Standard Background
  - Border and title
  - Grid overlay
  - One or more themes of interest

# Assembly of a Storm Water Map

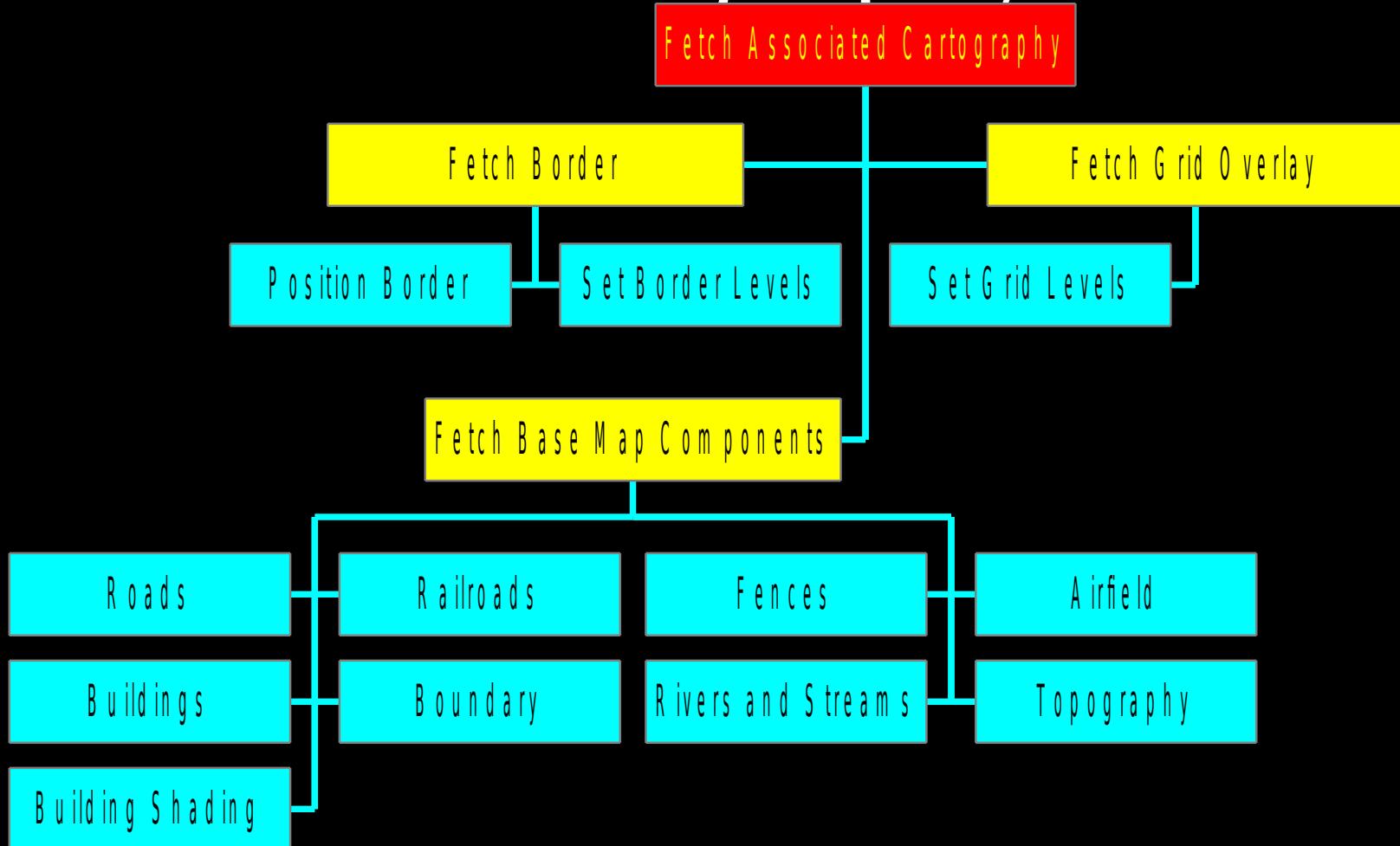


# The Steps



1. Fetch the storm water system
2. Fetch the associated cartography
3. Set the display priorities and symbology
4. Plot the map

# Fetching Associated Cartography



# The Steps

1. Fetch the border
2. Fetch the grid overlay
3. Fetch the base map components
  - Each of these processes call lower level processes
    - Fetch the buildings
    - Fetch the roads ....

# Object Identification

- Each object in the hierarchy is assigned a name and cataloged
- The object library is maintained at a single location
- New objects are added as needs dictate
- No objects are discarded – if you are asked for something once you'll see it again

# Interchangeability of Objects

- Objects can be interchangeable
- Objects used to assemble the storm water map may be reused with other utilities
- Interchangeability leads to easy assembly

# Objects can be Stored

- Once a particular theme is generated, it can be stored for later regeneration
- The latest data will always be displayed in a standard manner
- Bulk generation of plots or recall of special maps becomes easy
- Provides for easy update of web maps and the like

# The User Benefit

- The user is relieved of the tedium of data assembly
- QC is at the lowest level - data verification
- Customers can communicate needs to the user - 'I need ten copies of sheet 5 of the water system at half scale'
- There is a guarantee that no map component is omitted

# Institutionalization of Objects

- Web enabled technology makes fielding objects easier
- Objects with a likelihood of retained value are placed on the web
- Web interface provides a living master plan
- Shops and other customers use the web interface daily

# Reliance on the TSSDS Standard

- Establishes a vocabulary
- Establishes the data warehouse organization
- Supports the requirements for systematic data retrieval
- Supports the requirements for customized data output
- Establishes capability for data inventory

That's My Story  
and  
I'm sticking to it

The TSSDS  
Don't leave home without  
it